

CLAIMS

What is claimed is:

1. A fusing device of an electrophotographic image forming apparatus, the device comprising:

a fusing unit which includes a heating portion, a fixing frame which fixes and supports the heating portion at one side, and a fusing film sliding along a circumference of the fixing frame; and

a pressing roller which presses the fusing film to the heating portion to slide the fusing film;

wherein the heating portion is in contact with the pressing roller and forms a fusing nip portion having a predetermined width.

2. The device of claim 1, wherein the heating portion comprises:

a heat pipe, both ends of which are sealed and in which a predetermined amount of a working fluid is contained;

an insulating material which surrounds the heat pipe;

a resistive coil which winds the insulating material and heats the heat pipe; and

a nip plate at a lower portion of the resistive coil to contact the pressing roller through the fusing film and to form the fusing nip portion.

3. The device of claim 2, wherein the nip plate is formed of a ceramic material selected from a group consisting of SiC, MgO, and Al<sub>2</sub>O<sub>3</sub>.

4. The device of claim 3, wherein the width of the nip plate at a printing route is 3-10 mm.

5. The device of claim 1, further comprising a heater which heats the pressing roller, is placed inside the pressing roller.

6. The device of claim 5, wherein the heater is a halogen lamp.

7. The device of claim 1, wherein one surface of the heat pipe is closely

adhered to the nip plate to transfer heat to the nip plate.

8. The device of claim 1, wherein the fixing frame is manufactured by injection molding.

9. A method of fusing an electrophotographic image in an image forming apparatus, the method comprising:

heating a heating portion contiguous to a path over which a material having an electrophotographic image passes;

fixing and supporting a fixing frame to facilitate sliding a fusing film along a circumference of the fixing frame; and

pressing the fusing film to the heating portion to slide the fusing film so that a fusing nip portion having a predetermined width is formed.

10. The method of claim 9, further including:

controlling a heat of the heating portion by:

using a predetermined amount of a working fluid in a heat pipe of the heating portion to absorb heat;

using an insulating material to surround the heat pipe; and

using a resistive coil wound around the insulating material to heat the heat pipe,

wherein a nip plate at a lower portion of the resistive coil contacts a pressing roller through the fusing film to form the fusing nip portion.

11. The method of claim 10, wherein the nip plate is formed of a ceramic material selected from a group consisting of SiC, MgO, and Al<sub>2</sub>O<sub>3</sub>.

12. The method of claim 11, wherein the width of the nip plate at a printing route is 3-10 mm.

13. The method of claim 10, further including using a heater inside the pressing roller to heat the pressing roller.

14. The method of claim 9, wherein the fusing unit uses a halogen lamp to heat the heating portion.

15. The method of claim 10, including closely adhering a surface of the heat pipe to the nip plate to transfer heat to the nip plate.